

PROJECT DESCRIPTION

THIS PROJECT INVOLVES THE RECONSTRUCTION OF THE EXISTING TRAFFIC SIGNAL AT THE INTERSECTION OF MD 140 AT MD 91, IN CARROLL COUNTY. MD 140 IS ASSUMED TO RUN IN AN EAST-WEST DIRECTION.

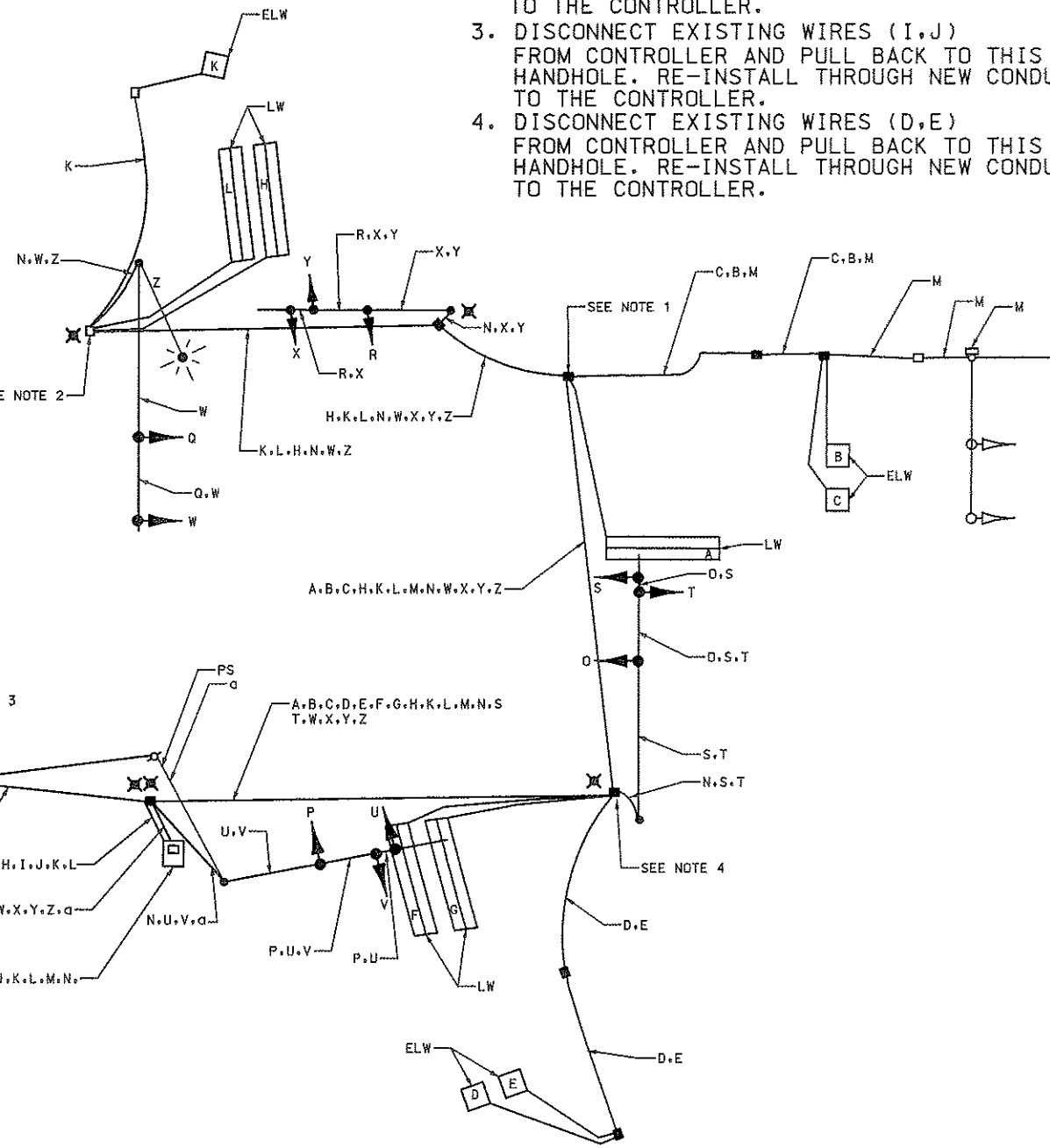
CONTROLLER OPERATION

THE EXISTING EIGHT-PHASE, FULLY ACTUATED NEMA CONTROLLER HOUSED IN A BASE MOUNTED CABINET WILL BE USED. THE INTERSECTION OPERATION WILL NOT BE CHANGED.

WIRING DIAGRAM

NOTES:

- 1. DISCONNECT EXISTING WIRES (B,C,M) FROM CONTROLLER AND PULL BACK TO THIS EXISTING HANDHOLE. RE-INSTALL THROUGH NEW CONDUIT TO THE CONTROLLER.
- 2. DISCONNECT EXISTING WIRE (K) FROM CONTROLLER AND PULL BACK TO THIS EXISTING HANDHOLE. RE-INSTALL THROUGH NEW CONDUIT TO THE CONTROLLER.
- 3. DISCONNECT EXISTING WIRES (I,J) FROM CONTROLLER AND PULL BACK TO THIS EXISTING HANDHOLE. RE-INSTALL THROUGH NEW CONDUIT TO THE CONTROLLER.
- 4. DISCONNECT EXISTING WIRES (D,E) FROM CONTROLLER AND PULL BACK TO THIS EXISTING HANDHOLE. RE-INSTALL THROUGH NEW CONDUIT TO THE CONTROLLER.



WIRING KEY

- A,F-H,L 2-CONDUCTOR ELECTRICAL CABLE ALUMINUM SHIELDED (NO. 14 A.W.G.)
- B-E,I-K EXISTING 2-CONDUCTOR ELECTRICAL CABLE ALUMINUM SHIELDED (NO. 14 A.W.G.)
- M EXISTING 12-PAIR VOICE GRADE CABLE
- N STRANDED BARE COPPER GROUND WIRE (NO. 6 A.W.G.)
- D-R 5-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
- S-Y 7-CONDUCTOR ELECTRICAL CABLE (NO. 14 A.W.G.)
- Z 2-CONDUCTOR ELECTRICAL CABLE (NO. 12 A.W.G.)
- o 12-PAIR VOICE GRADE INTERCONNECT CABLE
- ELW EXISTING LOOP WIRE
- LW LOOP WIRE (NO. 14 A.W.G.)
- X GROUND ROD
- PS PROPOSED ELECTRIC SERVICE

PHASE CHART

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | |
|--------------------|--|------|------|------|------|------|------|------|------|------|------|--|
| | | | | | | | | | | | | |
| PHASE 1 + 6 | R | R | G | G | G | R | R | R | R | R | R | |
| 1 + 6 CHANGE | R | R | G | G | G | R | R | R | R | R | R | |
| PHASE 2 + 6 | G | G | G | G | G | R | R | R | R | R | R | |
| 2 + 6 CHANGE | Y | Y | Y | Y | Y | R | R | R | R | R | R | |
| PHASE 3 + 7 | R | R | R | R | R | R | R | R | R | R | R | |
| 3 + 7 CHANGE | PHASE 3+7 MAY CHANGE TO PHASE 3+8, 4+7, OR 4+8 | | | | | | | | | | | |
| PHASE 3 + 8 | R | R | R | R | R | R | R | R | G | G | G | |
| 3 + 8 CHANGE | R | R | R | R | R | R | R | R | G | G | G | |
| PHASE 4 + 7 | R | R | R | R | R | G | G | G | R | R | R | |
| 4 + 7 CHANGE | R | R | R | R | R | G | G | G | R | R | R | |
| PHASE 4 & 8 | R | R | R | R | R | G | G | G | G | G | G | |
| 4 & 8 CHANGE | R | R | R | R | R | Y | Y | Y | Y | Y | Y | |
| FLASHING OPERATION | FL/Y | FL/Y | FL/Y | FL/Y | FL/Y | FL/R | FL/R | FL/R | FL/R | FL/R | FL/R | |

EQUIPMENT LIST "A"

A. EQUIPMENT TO BE FURNISHED BY SHA AND INSTALLED BY CONTRACTOR

| ITEM NO. | QUANTITY | DESCRIPTION |
|----------|----------|---|
| ---- | 2 EA | R3-2 SIGN (30" X 30") MAST ARM MOUNT |
| ---- | 3 EA | R10-12 SIGN (36" X 42") MAST ARM MOUNT |
| ---- | 1 EA | D3-2 DUAL FACE SIGN "BALTIMORE BLVD." (VAR X 16") MAST ARM MOUNT |
| ---- | 1 EA | D3-2 DUAL FACE SIGN "GAMBER RD." (VAR X 16") MAST ARM MOUNT |
| ---- | 1 EA | D3-2 DUAL FACE SIGN "EMORY RD." (VAR X 16") MAST ARM MOUNT |
| ---- | 1 EA | SHIELD ASSEMBLY "EAST/MD 140/RT ARROW" (30" X 51") POLE MOUNT |
| ---- | 1 EA | SHIELD ASSEMBLY "EAST/MD 140/LT ARROW" (48" X 75") POLE MOUNT |
| ---- | 1 EA | SHIELD ASSEMBLY "WEST/MD 140/LT ARROW" (30" X 51") POLE MOUNT |
| ---- | 1 EA | SHIELD ASSEMBLY "WEST/MD 140/RT ARROW" (48" X 75") POLE MOUNT |
| ---- | 2 EA | W3-3(2) "SIGNAL AHEAD-PREPARE TO STOP WHEN FLASHING" SIGN (120 IN. X 60 IN.) MAST ARM MOUNT |
| ---- | 1 EA | R3-5R SIGN (30 IN. X 36 IN.) MAST ARM MOUNT |
| ---- | 3 EA | R1-2 SIGN (36 IN. X 36 IN.) GROUND MOUNT |

CONTACT PERSONS FOR DISTRICT 7 ARE AS FOLLOWS:

| | |
|---|--|
| MR. ROBERT FISHER DISTRICT ENGINEER (301) 624-8102 | MR. JIM BUCKALEW ASSISTANT DISTRICT ENGINEER - UTILITIES (301) 624-8110 |
| MR. JOHN CONCANNON ASSISTANT DISTRICT ENGINEER - TRAFFIC (301) 624-8141 | MR. DAVID COYNE ASSISTANT DISTRICT ENGINEER - MAINTENANCE (301) 624-8106 |

CONTACTS FOR OFFICE OF TRAFFIC AND SAFETY

| | |
|--|--|
| MR. RICHARD DAFF SR. CHIEF, TRAFFIC OPERATIONS (410) 787-7630 | MR. EUGENE BAILEY TEAM LEADER SIGN OPERATIONS (410) 787-7676 |
| MR. ROBERT SNYDER ASSISTANT DIVISION CHIEF, TRAFFIC OPERATIONS (410) 787-7631 | MR. DAVID SCHWARTZ SUPPLY OFFICE IV (SIGNAL SHOP WAREHOUSE) (410) 787-7668 |
| MR. ED RODENHIZER TEAM LEADER SIGNAL OPERATIONS (410) 787-7652 | |

EQUIPMENT LIST "B"

B. EQUIPMENT TO BE FURNISHED AND/OR INSTALLED BY CONTRACTOR

| ITEM NO. | QUANTITY | DESCRIPTION |
|----------|----------|--|
| 1001 | 1 EA | MAINTENANCE OF TRAFFIC |
| 2001 | 4 EA | TEST PIT EXCAVATION |
| 5001 | 120 LF | FURNISH AND INSTALL 5 IN. YELLOW HEAT APPLIED PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKING |
| 5002 | 620 LF | FURNISH AND INSTALL 5 IN. WHITE HEAT APPLIED PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKING |
| ---- | 600 LF | FURNISH AND INSTALL 10 IN. WHITE HEAT APPLIED PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKING |
| 5004 | 120 LF | FURNISH AND INSTALL 24 IN. HEAT APPLIED PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKING |
| 5005 | 4 EA | FURNISH AND INSTALL HEAT APPLIED PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKING LETTER |
| 5006 | 2 EA | FURNISH AND INSTALL HEAT APPLIED PERMANENT PREFORMED THERMOPLASTIC PAVEMENT MARKING ARROW |
| 5007 | 770 LF | REMOVE EXISTING PAVEMENT MARKINGS |
| 8001 | 20 CY | FURNISH AND INSTALL CONCRETE FOR SIGNAL FOUNDATION |
| 8021 | 730 LF | FURNISH AND INSTALL SAW CUT FOR SIGNAL (LOOP DETECTOR) |
| 8023 | 50 LF | FURNISH AND INSTALL 1 IN. LIQUID TIGHT FLEXIBLE NON-METALLIC CONDUIT FOR DETECTOR SLEEVE |
| 8030 | 150 LF | FURNISH AND INSTALL 4 IN. SCHEDULE 80 RIGID ELECTRICAL PVC CONDUIT- TRENCHED |
| 8031 | 330 LF | FURNISH AND INSTALL 4 IN. SCHEDULE 80 RIGID ELECTRICAL PVC CONDUIT-SLOTTED |
| 8033 | 4 EA | FURNISH AND INSTALL ELECTRICAL HANDHOLE |
| 8034 | 5 EA | FURNISH AND INSTALL GROUND ROD - 3/4" X 10' |
| 8038 | 1500 LF | FURNISH AND INSTALL 12-PAIR COMMUNICATION CABLE, JELLY FILLED (OVERHEAD) |
| 8040 | 2530 LF | FURNISH AND INSTALL LOOP WIRE ENCASED IN 1/4 IN. FLEXIBLE TUBING (NO. 14 A.W.G.) |
| 8041 | 1430 LF | FURNISH AND INSTALL ELECTRICAL CABLE - 2 CONDUCTOR (ALUMINUM SHEILD) |
| 8044 | 110 LF | FURNISH AND INSTALL ELECTRICAL CABLE - 5 CONDUCTOR (NO. 14 A.W.G.) |
| 8045 | 2080 LF | FURNISH AND INSTALL ELECTRICAL CABLE - 7 CONDUCTOR (NO. 14 A.W.G.) |
| 8046 | 500 LF | FURNISH AND INSTALL ELECTRICAL CABLE - 2 CONDUCTOR (NO. 12 A.W.G.) |
| 8048 | 530 LF | FURNISH AND INSTALL NO. 6 A.W.G. STRANDED BARE COPPER GROUND WIRE |
| 8049 | 50 LF | FURNISH AND INSTALL ELECTRICAL CABLE - 1 CONDUCTOR (NO. 4 A.W.G.) |
| 8052 | 99 SF | INSTALL GROUND MOUNTED SIGN |
| 8053 | 210 SF | INSTALL OVERHEAD SIGN |
| 8055 | 1 EA | FURNISH AND INSTALL 250 WATT HPSV LUMINIAIRE WITH PHOTOCELL |
| 8056 | 1 EA | FURNISH AND INSTALL 20 FT. LIGHTING BRACKET ARM FOR TRAFFIC SIGNAL STRUCTURE |
| 8060 | 1 EA | REMOVE AND DISPOSE OF EXISTING MATERIAL AND EQUIPMENT |
| 8061 | 2 EA | INSTALL CONDUIT BEND IN EXISTING BASE |
| 8066 | 1 EA | FURNISH AND INSTALL CONTROL AND DISTRIBUTION EQUIPMENT |
| 8077 | 1 EA | FURNISH AND INSTALL 27 FT. MAST ARM POLE AND 50 FT. MAST ARM |
| 8078 | 1 EA | FURNISH AND INSTALL 27 FT. MAST ARM POLE AND 60 FT. MAST ARM |
| 8079 | 2 EA | FURNISH AND INSTALL 27 FT. MAST ARM POLE AND 70 FT. MAST ARM |
| 8084 | 36 EA | FURNISH AND INSTALL 12 IN. VEHICULAR TRAFFIC SIGNAL HEAD SECTION |
| 8085 | 9 EA | FURNISH AND INSTALL 8 IN. VEHICULAR TRAFFIC SIGNAL HEAD SECTION |
| ---- | 4100 LF | PULL BACK AND RE-INSTALL EXISTING CABLE |
| ---- | 4 EA | REPLACE HANDHOLE FRAME AND COVER |

EQUIPMENT LIST "C"

C. EXISTING EQUIPMENT TO BE REMOVED BY THE CONTRACTOR AND DELIVERED TO THE STATE HIGHWAY ADMINISTRATION, 7491 CONNELLEY DRIVE, HANOVER, MARYLAND 21076. THE CONTRACTOR SHALL NOTIFY THE SHA AT (410) 787-7652 AT LEAST THREE DAYS IN ADVANCE OF DELIVERY.

| ITEM NO. | QUANTITY | DESCRIPTION |
|----------|----------|-------------|
| ---- | ---- | NONE |

NOTE: ALL REMOVED SIGNAL EQUIPMENT AND MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR



MARYLAND DOT - STATE HIGHWAY ADMINISTRATION
Office of Traffic & Safety
TRAFFIC ENGINEERING DESIGN DIVISION
GENERAL INFORMATION SHEET
MD 140 AND MD 91

| | | | |
|-------------------------------|------------------|--------------------|------------------|
| DRAWN BY: BRUCE THOMPSON JG | F.A.P. NO. _____ | TS NO. 1677C GI | SHEET NO. 3 OF 2 |
| CHECKED BY: DIMITRIOS ZAFIRIS | S.H.A. NO. _____ | T.I.M.S. NO. _____ | |
| SCALE: NONE | COUNTY: CARROLL | E620 | |
| DATE: NONE | LOG MILE: _____ | | |